

What is claimed is:

1. An optical pickup apparatus which modulates intensity of a light beam based on data to be recorded on an optical recording medium and emits the light beam, of which intensity is modified, to the optical recording medium, the optical pickup apparatus comprising:
 - an emission device which emits the light beam to the optical recording medium by switching between a multi-pulse beam consisting of a plurality of pulsed lights and single-pulse beam consisting of a single pulsed light depending on the data, said emission device emitting the single-pulse beam when recording the data on the optical recording medium during a predetermined period;
 - a detection device which detects at least part of the light beam emitted from said emission device;
 - an acquisition device which acquires an emitted light intensity level of the detected light beam as a sampling value during a predetermined period;
 - a storage device which stores, as a target sampling value, a sampling value that serves as a target for the light intensity level of the light beam acquired as the sampling value;
 - an error calculation device which calculates error between the stored target sampling value and the acquired sampling value; and
 - a control device which controls the output intensity level of the light beam emitted from said emission device, based on the calculated sampling error.

2. The optical pickup apparatus according to claim 1, further comprising a period setting device which sets the predetermined period for said acquisition device to acquire the emitted light intensity level of the detected light beam as a sampling value.

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3. An optical pickup apparatus which records data on an optical recording medium with multiple kinds of different partial data by modulating a intensity of light beam based on each kind of partial data and emitting the light beam, of which intensity is modified, to the optical recording medium, the optical pickup apparatus comprising:

an emission device which emits the light beam to the optical recording medium by switching between a multi-pulse beam for recording one item of the partial data using a plurality of pulsed lights and a single-pulse beam for recording one item of the partial data using one pulsed light, said emission device emitting the single-pulse beam when recording a predetermined kind of partial data on the optical recording medium;

a detection device which detects at least part of the light beam emitted from the emission device;

an acquisition device which acquires an emitted light intensity level of the detected light beam as a sampling value when recording a predetermined kind of the partial data;

a storage device which stores, as a target sampling value, a sampling value that serves as a target for the light intensity level of the light beam acquired as the sampling value;

an error calculation device which calculates error between the stored target sampling value and the acquired sampling value; and

a control device which controls the output intensity level of the light beam emitted from the emission device, based on the calculated sampling error.

- 5 4. The optical pickup apparatus according to claim 3, when recording a predetermined kind of the partial data during a predetermined period, wherein:

said emission device emits a single-pulse beam; and

10 said acquisition device acquires, as a sampling value, the emitted light intensity level of the light beam detected by said detection device.

5. The optical pickup apparatus according to claim 3, when recording a predetermined kind of the partial data with a predetermined timing during the predetermined period, wherein:

15 said emission device emits a single-pulse beam; and

said acquisition device acquires, as a sampling value, the emitted light intensity level of the light beam detected by said detection device.

- 20 6. The optical pickup apparatus according to claim 3, when recording a plurality of predetermined kinds of the partial data, wherein:

said emission device emits a single-pulse beam; and

said acquisition device acquires, as a sampling value, the emitted light intensity level of the light beam detected by said detection device.

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7. The optical pickup apparatus according to claim 6, wherein said emission device emits a single-pulse beam only when the acquisition device acquires the sampling value.

5 8. The optical pickup apparatus according to claim 3, when the multiple kinds of partial data are identified by the data length of the partial data and when the partial data recorded has a predetermined data length, wherein:

said emission device emits a single-pulse beam; and

10 said acquisition device acquires, as a sampling value, the emitted light intensity level of the light beam detected by said detection device.

9. The optical pickup apparatus according to claim 3, when the data is recorded by forming marks and spaces on the optical recording
15 medium, a plurality of kinds of partial data are identified by run length recorded in the marks and the spaces, and the partial data recorded has a predetermined run length, wherein:

said emission device emits a single-pulse beam; and

20 said acquisition device acquires, as a sampling value, the emitted light intensity level of the light beam detected by said detection device.

10. A light beam emission control method which modulates intensity of a light beam based on data to be recorded on an optical recording medium and emits the light beam, of which intensity is modified, to the
25 optical recording medium, the light beam emission control method comprising:

an emission process of emitting the light beam from an emission device to the optical recording medium by switching between a multi-pulse beam consisting of a plurality of pulsed lights and single-pulse beam consisting of a single pulsed light depending on the data, and said emission process emitting the single-pulse beam from
5 said emission device when recording the data on the optical recording medium during a predetermined period;

a detection process of detecting at least part of the light beam emitted from said emission device;

10 an acquisition process of acquiring an emitted light intensity level of the detected light beam as a sampling value during a predetermined period;

an error calculation process of calculating error between a target sampling value that serves as a target for the light intensity level of the
15 light beam acquired as the sampling value, the target sampling value is prestored in storage device; and

an emission control process of controlling the emission of the light beam from said emission device, based on the calculated sampling error in said error calculation process.

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11. A light beam emission control method which records data on an optical recording medium with multiple kinds of different partial data by modulating a intensity of light beam based on each kind of partial data and emitting the light beam, of which intensity is modified, from
25 an emission device to the optical recording medium, the light beam emission control method comprising:

an emission process of emitting the light beam from said emission device to the optical recording medium by switching between a multi-pulse beam for recording one item of the partial data using a plurality of pulsed lights and a single-pulse beam for recording one item of the partial data using one pulsed light, said emission process
5 emitting the single-pulse beam from said emission device when recording a predetermined kind of partial data on the optical recording medium;

a detection process of detecting at least part of the light beam
10 emitted from said emission device;

an acquisition process of acquiring an emitted light intensity level of the detected light beam as a sampling value when recording a predetermined kind of the partial data;

an error calculation process of calculating error between a target
15 sampling value that serves as a target for the light intensity level of the light beam acquired as the sampling value, the target sampling value is prestored in storage device; and

an emission control process of controlling the emission of the light beam from said emission device, based on the calculated
20 sampling error in said error calculation process.

12. A recording medium wherein a light beam emission control program is recorded so as to be read by a computer, the computer included in a optical pickup apparatus which records data on an
25 optical recording medium with multiple kinds of different partial data by modulating a intensity of light beam based on each kind of partial data and emitting the light beam, of which intensity is modified, from

an emission device to the optical recording medium, said program causing the computer to function as:

an emission control device which controls the emission of the light beam from the emission device to the optical recording medium
5 by switching between a multi-pulse beam consisting of a plurality of pulsed lights and single-pulse beam consisting of a single pulsed light depending on the data, and said emission control device controlling the emission of the single-pulse beam from said emission device when recording the data on the optical recording medium during a
10 predetermined period;

a detection device which detects at least part of the light beam emitted from said emission device;

an acquisition device which acquires an emitted light intensity level of the detected light beam as a sampling value during a
15 predetermined period;

an error calculation device which calculates error between a target sampling value that serves as a target for the light intensity level of the light beam acquired as the sampling value, and the target sampling value prestored in storage device; and

20 a level control device which controls the output intensity level of the light beam emitted from said emission device, based on the calculated sampling error.

13. A recording medium wherein a light beam emission control
25 program is recorded so as to be read by a computer, the computer included in a optical pickup apparatus which records data on an optical recording medium with multiple kinds of different partial data

by modulating a intensity of light beam based on each kind of partial data and emitting the light beam, of which intensity is modified, from an emission device to the optical recording medium, said program causing the computer to function as:

5 an emission control device which controls the emission of the light beam from the emission device to the optical recording medium by switching between a multi-pulse beam for recording one item of the partial data using a plurality of pulsed lights and a single-pulse beam for recording one item of the partial data using one pulsed light, said
10 emission control device controlling the emission of the single-pulse beam when recording a predetermined kind of partial data on the optical recording medium;

 a detection device which detects at least part of the light beam emitted from said emission device;

15 an acquisition device which acquires an emitted light intensity level of the detected light beam as a sampling value when recording a predetermined kind of the partial data;

 an error calculation device which calculates error between a target sampling value that serves as a target for the light intensity level
20 of the light beam acquired as the sampling value, the target sampling value is prestored in storage device, and

 a level control device which controls the output intensity level of the light beam emitted from said emission device, based on the calculated sampling error.

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